

Attorney Docket No: MLFE.P003

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REMARKS

By this amendment, claims 1-5, 9-12, 17-18, and 25-33 have been amended, the remaining claims remain as previously presented, no new claims have been added and no claims have been deleted. Hence, claims 1-34 remain currently pending.

1. Specification

The pending Office Action states that the "Cross Reference to Related Applications" section of the Specification needs to be updated to indicate issued patents. Applicant herewith provides replacement paragraphs as required to indicate any issued patents related to the present application.

2. Response to Claim Rejections under 35 U.S.C. § 103

Claims 1-8, 11-29, and 31-34 are rejected under 35 U.S.C. § 103(a) as being anticipated by U.S. Patent No. 3,799,149(Rummel et al.) in view of U.S. Patent No. 5,645,071 (Harmoncourt et al.). Claims 9, 10, and 30 are rejected under 35 U.S.C. § 103(a) as being anticipated by Rummel in view of Harnancourt, and further in view U.S. Patent No. 6,325,978 (Labuda et al.).

Claim 1 has been amended to recite:

1. A respiratory gas exchange monitor, comprising:
  - a respiratory gas conduit configured to convey inhaled gases and exhaled gases of a subject;
  - a single respiratory gas flow meter coupled to said respiratory gas conduit, said respiratory gas flow meter being configured to generate an output associated with both a volume of said inhaled gases and a volume of said exhaled gases;
  - a respiratory gas sensor coupled to said respiratory gas conduit, said respiratory gas sensor being configured to generate an output associated with a concentration of oxygen in said exhaled gases; and
  - a computation unit coupled to said respiratory gas flow meter and said respiratory gas sensor, said computation unit being configured to process said output of said respiratory gas flow meter and said output of said respiratory gas sensor to determine an amount of carbon dioxide produced by said subject and an amount of oxygen consumed by said subject, said computation unit

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being configured to determine a respiratory quotient of said subject based on said amount of carbon dioxide produced and said amount of oxygen consumed, wherein said computation unit includes a comparator function to compare said respiratory quotient to a reference respiratory quotient, said comparator function operable to trigger a warning signal in the event that it detects a deviation by a defined amount of said respiratory quotient to said reference respiratory quotient, wherein the warning signal is monitored by a system that is configured to alter a dietary regimen of the subject in an effort to reduce said deviation to within the defined amount in the event that the deviation is due to dietary causes, or to recommend a change in exercise regimen in the event that the deviation is due to excessive physical exertion.

As amended, claim 1 recites a system comprising a respiratory gas exchange monitor comprising a respiratory gas conduit and a single respiratory gas flow meter coupled to the gas conduit to generate an output associated with both a volume of inhaled gases and a volume of exhaled gases, and a comparator function that triggers a warning signal in the event that the respiratory quotient deviates from a reference respiratory quotient by a defined amount, and wherein the trigger is used to alter either a dietary regimen or exercise level. As stated in the Office Action, Rummel in view of Harmoncourt does not teach that "the computation unit is configured to 'compare said respiratory quotient with a reference quotient to determine a measure of deviation of said respiratory quotient with respect to said reference quotient.'" (Office Action 05-16-07, p. 10). However, the Office Action further states that Labuda teaches that metabolic measurement includes determination of a patient's energy requirements and that indirect calorimetry is the only true way to measure caloric requirements and assessment of response to nutrition. (Office Action 05-16-07, pp. 10-11).

The Labuda patent describes device and method for performing fast (breath-by-breath) monitoring of oxygen concentration in a patient's airway using a luminescent chemical in the airway. The device of the Labuda patent comprises a small transducer device that utilizes visible light optoelectronics and consumes minimal power. It has a sensor with a polymeric membrane in which a luminescable composition is dispersed. Oxygen flow through the sensor creates a detectable change in phosphorescence intensity.

Labuda does not teach or suggest a gas flow meter with a computation unit configured to determine an amount of carbon dioxide and oxygen produced by a subject and to determine a respiratory quotient based on these amounts, with a comparator function that

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triggers a warning signal in the event that the respiratory quotient deviates from a reference respiratory quotient by a defined amount, and wherein the trigger is used to alter either a dietary regimen or exercise level. Instead, Labuda only teaches an oxygen concentration sensor using luminescence. Labuda only mentions caloric requirements and nutritional support in the Background of the Invention section to provide a vague reference to motivation for indirect calorimetry techniques. The present claim element of a comparator function to compare a respiratory quotient to a reference respiratory quotient, and trigger a warning signal in the event that it detects a deviation by a defined amount of the respiratory quotient to the reference respiratory quotient, and wherein the warning signal is monitored by a system that is configured to alter a dietary regimen of the subject in an effort to reduce said deviation to within the defined amount in the event that the deviation is due to dietary causes, or to recommend a change in exercise regimen in the event that the deviation is due to excessive physical exertion, is distinct over any teaching or suggestion of Labuda. Therefore, it is respectfully submitted that claim 1, as amended, is not anticipated by the cited combination of references.

Claims 2-10 depend from claim 1, and for the reasons provided above with regard to claim 1, it is respectfully submitted that these claims are not anticipated by Rummel. Moreover, these claims include elements that are distinguishable over the Rummel patent. For example, claim 4 recites the element of storing the respiratory quotient in a database that also stores multiple respiratory quotients corresponding to multiple determinations based on respective measurements of amounts of carbon dioxide produced and said amount of oxygen consumed of said subject. Such a database is not taught or suggested in Labuda. Therefore, it is respectfully submitted that claim 4 is patentable over the cited combination, for this reason as well.

Independent claims 12, 18, 26, 31, and 33 have been amended to include the same amendments as made in claim 1. Therefore, for the reasons provided above with respect to claim 1, it is respectfully submitted that these claims, and their respective dependent claims are patentable over the cited combination of references. In addition, certain of the dependent claims include elements that are further distinguishable over Rummel. For example, claims 3, 28, and 33 recite a respiratory gas sensor that analyzes a respiratory quotient in comparison

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with an actual nutrition intake of the subject to determine whether any deviation of the respiratory quotient relative to a reference respiratory quotient is caused by a condition selected from the group consisting of: inappropriate nutrition intake, metabolic imbalance, pulmonary dysfunction, and recent physical exertion. None of the cited references, either alone or in combination teach or suggest such a gas sensor, and therefore, these claims are patentable under 35 U.S.C. § 102 in light of the cited references.

Applicants respectfully request that the above-described amendments be made part of the official record in the present application, and submit that support for the claim amendments and new claims is present in the specification, claims, and drawings as originally filed, and that no new matter has been added.

If there are any shortages, the Examiner is authorized to charge our Deposit Account Number 503616.

Respectfully submitted,

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